The Hidden Dange

by LCdr. Glen K. Hansen

I was scheduled for an NVG flight with an instructor pilot. We discussed the hazards of low-altitude NVG navigation, then briefed the hazards in the high-altitude bombing pattern. Following the brief, we talked about hidden hazards of low-altitude flight over Florida. That discussion took me back four years to a low-altitude, NVG-navigation flight in northern Nevada—a flight that constantly reminds me how quickly the dangers of naval aviation can appear and disappear.

I was assigned to Naval Strike Warfare Center and dual-qualified in the A-6 (primary) and the FA-18. We were flying an A-6 on an NVG currency mission, encompassing a low-level and bombing in the B-17 work area. The moon was about 50 percent, 120 degrees azimuth and 60 degrees elevation. It was a beautiful moon for the mission.

Besides the proficiency portion of the mission, we were evaluating a low-light upgrade to the system and were collecting data points in an evaluation of NVGs as a targeting source. I started out wearing the upgraded goggles and my BN would wear the standard NVGs. Sometime during the flight, we would climb to high altitude and trade goggles.

We launched out of Fallon and headed north to B-20. We planned on descending to low altitude in B-20, heading east over the mountains until we reached Edwards Valley, turning south and proceeding south-southwest until we reached Sperm Lake. We would then climb and head into B-17 for high-altitude target recognition and bombing. The terrain was extremely challenging, and we would rely on the A-6's low-altitude, terrain-clearance capabilities (TC).

We descended into B-20, checked the radar and TC and turned east at 800 feet AGL. My BN found a valley, and I turned the aircraft to run straight into it. The mountain range started rising, and I began a gentle climb to clear the mountains shown on my display.

The SRTC system in the A-6 was vulnerable to small mountains hiding in front of large mountains. The radar could not distinguish where the small mountain ended and the large mountain began. The crews overcame this by studying the chart thoroughly and planning the route to avoid this phenomenon.

We had studied the chart and planned our route carefully, but we were surprised this night. I had the aircraft in a gentle climb, using both the TC and NVGs to get a feel for the terrain. Suddenly, the radalt went off; I had it set at 450 feet. The instinctive reaction is to add power, start climbing and then evaluate the displays. As I got the nose 20 degrees above the horizon, my TC display started showing the distortion between the near mountain and the far one and proved that we were seeing and flying off the far mountain.

The radalt continued to sound off, and I looked left to see the mountain peak going below my left wing. There was a little snow on top that shined in the moonlight. The radalt bottomed out near 200 feet, a bit low for my comfort level. I continued to climb to 10,000 feet and set the autopilot.

You should be asking how I could get this close to a mountain while wearing NVGs. The obvious answer was outside the cockpit. Remember the moon elevation, azimuth, and brightness? Heading east toward this moon was like flying directly into the sun on a late-afternoon low-level. The new goggles were

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better in low-light conditions, but just like the original Catseyes, they gained down with too much light. I was getting very little help from the goggles, and they were likely hurting my scan as they took time away from studying the TC display. The goggles only helped as I was pulling away.

We reevaluated continuing the flight and, as a crew, completed the evaluation with our minimum altitude set above 1,000 feet AGL. We finished the bombing and returned to Fallon for a short debrief. There wasn't much we could say to each other. We both knew how close we had come to planting ourselves in the side of a mountain. I spent a good deal of time evaluating my capabilities and priorities.

I have not flown a NVG low-level in several years while tactics have developed. I have maintained a set of priorities whenever I fly with goggles.

No matter how good or well-trained an aviator is, he can become overloaded. We need to continually evaluate our own ability to cope and determine how much crosscheck time is available. It was obvious I was task-saturated, and my scan broke down. Keep the scan going and climb to cope if necessary.

NVG flights require a better personal evaluation. Am I capable of completing the flight? Can I successfully complete the flight with NVGs? If not, don't fly with the goggles. By the way, the new AN/AVS-9 goggles also require aligning the tube, focusing, and evaluation using the ANV-20/20 infinity focusing box before each flight.

I fly with the NVGs to improve SA, but if they degrade SA by taking too much time away from other displays, stop using them until they are again useful. It is also important to remember which tool is going to provide the best SA in any given situation. If it is not the goggles, don't hesitate to transition to something else. We are often fascinated by the visual clarity provided by goggles, but they may be clouding our SA.

Bottom line is never use NVGs if they will distract from the mission. I counted on them to keep me out of trouble and failed to use the other tools at my disposal.

LCdr. Hansen flies with VFA-87.